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REPORT OF THE JOINT CENSUS ADVISORY COMMITTEE OF THE AMERICAN STATISTICAL AND AMERICAN ECONOMIC ASSOCIATIONS

To the President and Members of the American Economic and American Statistical Associations

In the autumn of 1918 it was brought to the attention of the Secretary of Commerce that events of the past few years had not tended to increase the confidence existing between the Bureau of the Census and the American Statistical Association and the American Economic Association, the two scientific organizations most directly interested in the Census Bureau and its product, but that these associations had in fact been inclined to adopt a critical attitude toward the Bureau. Accordingly, in order to restore confidence and increase cooperation and efficiency, the Secretary of Commerce with the cordial assistance and approval of the Director of the Census, on November 18, 1918, addressed an identical letter to Dr. Wesley C. Mitchell, President of the American Statistical Association, and Professor Irving Fisher, President of the American Economic Association. This letter was as follows:

November 18, 1918.

My dear Sir:

As you are doubtless aware a Bill authorizing the Fourteenth Census to be taken as of the year 1920 has passed the House of Representatives and is pending in the Senate. We have sufficient confidence in its probable passage in substantially its existing form to warrant our addressing you on behalf of the Bureau of the Census and of the Department of Commerce as below.

It is the earnest desire of the Director of the Census that the Fourteenth Census shall mark a definite advance in quality, promptness, and in the effectiveness of the work done. The legislation has, therefore, been drawn after careful study of the previous legislation, after conference with those who have taken part in earlier work of the kind and with the approval of the Civil Service Commission in the portions which fall under the purview of that body.

The step we now desire to take is to tie up the work of this census to the best scientific thought and practice as represented through your Association

and the American Economic Association. Consequently this letter is addressed to you and a letter of like tenor and date is sent to Prof. Irving Fisher, President of the American Economic Association, to request that you appoint a committee of your body to be advisory to the Director of the Census and the Department of Commerce in connection with the work of the Fourteenth Census. We suggest for your consideration a committee of three but are not particular as to the exact number save that it should be of such moderate size as to be efficient in its work.

We should deem it a pleasure, were such a committee appointed, to have it confer with the Director of the Census both before and during the work of the census itself and careful consideration will be gladly given to the suggestions such a committee might think well to make.

Awaiting what I trust will be a favorable reply, I am,

Yours very truly,

WILLIAM C. REDFIELD,
Secretary.

Upon receipt of this letter by the officers of the two associations it was at once recognized that this joint committee might be of much practical assistance to the Bureau in confronting the great task of organizing and taking the Fourteenth Census. It was also believed that in the event of successful coöperation the example and precedent of an effective advisory committee would be likely to prove of great importance to the Government in leading to similar relationships between other Government Bureaus and scientific associations or private organizations. One of the important developments of the war had been the sudden and close collaboration between the Government and scientific and industrial interests of the nation made necessary during the emergency period, and it was pointed out by men of standing, who had come to Washington solely to be of assistance to the Government, that the time was favorable for encouraging similar cooperation in connection with a recurring and distinctly peace function of the Government. It was recognized that of all the peacetime activities of the Federal Government, taking and compiling the census was the largest.

Accordingly, at the annual meetings of the two associations, both held in Richmond the following month (December 27), a cordial response was made to this request.

The Joint Advisory Committee appointed was as follows: Representing the American Economic Association, Professor

Walter F. Willcox, Professor Edwin R. A. Seligman, and Dr. Wesley C. Mitchell; representing the American Statistical Association, Professor Carroll W. Doten, Dean Edwin F. Gay, and Mr. William S. Rossiter.

Each member of the Joint Committee was considered to be especially qualified by his experience or work, or both, to be of practical assistance to the Bureau.

At the time of the appointment of the Committee, Messrs. Gay, Doten, Mitchell, and Rossiter were still engaged in war work of a statistical or economic sort, and were therefore available in Washington for service on the Committee. By an agreement between the members and the Director, approved by the Department, the other two members not then in the Federal Service were appointed special agents of the Census at a salary of \$1 per annum to permit payment of traveling expenses and a small part of their living expenses during the meetings of the Committee. As rapidly as the other members retired from active Government service, which occurred between February and June, 1919, they were one by one placed upon the same basis, so that by July all were accredited as special agents of the Census without compensation.

The first meeting of the Advisory Committee was held February 10 and 11, 1919. Mr. Rossiter was elected Chairman. The Secretary of Commerce and the Director of the Census outlined the problems of the Bureau, and the Committee took up the consideration of general questions submitted to it, which naturally related to the preliminary organization of the work in anticipation of the enactment of the Fourteenth Census Law, then ready for passage by Congress.

MEETINGS HELD

Meetings of the Joint Committee have all been held in Washington. Thus far there have been seven, on February 10, February 27, March 21, April 18, May 23, June 27, and October 31. Each meeting has covered two days, so that from the organization of the Joint Committee up to the date of the preparation of this report, the Committee has devoted fourteen working days to its task. It has been customary to hold morning and afternoon sessions on each of the two days of the

meetings and on an average twelve hours have been spent at each meeting. The meetings have been faithfully attended; at all of them at least five members were present, and at three the entire membership have been in attendance. This record of attendance was accomplished oftentimes at great personal inconvenience.

Believing that systematic conduct of Committee affairs was one essential to success, the Committee requested the Director to assign an expert statistical clerk familiar with census operations and publications to act as secretary. This was promptly done, and Miss Mary F. Griffin, an editorial expert of the Division of Revision and Results, was assigned to this service. Miss Griffin has had charge of the preparation of proceedings and various memoranda and of much of the Committee's correspondence.

In general the opening session of each meeting of the Joint Committee has been occupied with conferences with the Director, statisticians, and other officials concerned with such subjects as were under consideration. These conferences have been followed by general discussion leading to the adoption of recommendations to the Bureau, which after the close of the meeting were transmitted to the Director.

SCOPE OF THE COMMITTEE WORK

The early meetings of the Committee naturally were occupied largely with conferences with the Director or Bureau Officials concerning plans, scope of the coming enumeration, and problems of administration. While the Committee was eager to aid in any manner, in searching for the opportunity for greatest usefulness, it took the position that administrative details and policies were the concern less of the Committee than the statistical product itself—especially the method of presentation and manner of distribution. Obviously, the former task is distinctly that of the officials in charge, for which they are responsible to the President and Congress. Hence after the earlier meetings the Committee gave consideration to the administrative side of the office only to the extent of assuring itself that the work was proceeding in such a way that the product would not be impaired. Some consideration was

given (at the Director's suggestion) to the problem of securing a suitable card punch, but the Committee's advice was not accepted. (See Recommendation 27, Appendix I.) It became increasingly evident that in a careful, well worked out plan of form and content of Census published results lay the principal possibilities of Committee service. Other recommendations in considerable numbers were made and it is hoped were useful, but in submitting those relating to form and content the Committee believes that it has been able to aid the Bureau to effect real reforms.

ANALYSIS OF RECOMMENDATIONS SUBMITTED

The deliberations of the Committee took concrete form in 39 resolutions. These relate to the following subjects: Organization of personnel, 6; preliminary work in general, 3; mechanical devices proposed for use in the next census, 4; the population schedule and segregation of urban and rural populations, 6; the classification of occupations, 2 (comprising 13 subdivisions); schedules for manufacturing industries, 2; the agricultural schedules and the work of the Division of Agriculture, 4; order of publication and content of census reports, 7; methods of presentation and distribution of the results, 2 (comprising 9 subdivisions); miscellaneous, 3.

The Director of the Census welcomed the opinions of the Advisory Committee. He has extended every facility to the Committee in his power, and he expresses very earnestly his desire to secure the coöperation of the American Statistical and American Economic Associations in making the work of the Bureau most effective. To each recommendation of the Committee the Director has made response in writing. He has either accepted the Committee's judgment or has promised to give attention to the suggestions made. Of the 39 recommendations made* 17 have been substantially approved and adopted by the Bureau; 6 have not been concurred in;

* Recommendations of the Committee:

- A. Substantially approved and adopted: 1, 3, 4, 6, 8, 9, 10, 13, 14, 20, 26, 7(a), 18(1), and 28 (2).
- B. Approved but not finally disposed of: 5, 15, 21.
- C. Not concurred in: 12, 22, 24, 29, 7(b), 7(e), and 18(2).
- D. Not yet acted upon: 23, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 18(3), 28(1).
- E. No specific action required: 2, 11, 17.

and 13 seem not yet to have been acted upon. Three others were of such a nature that no definite action was called for. Several of those in the unacted on group could not be satisfactorily disposed of without considerable time and thought, but the more important have practically been accepted. This group includes the recent series dealing with the general subjects of content and methods of presentation and distribution.

The space occupied by the series of recommendations of the Advisory Committee to the Director of the Census forbids inclusion in the body of this report of progress. The entire series of recommendations arranged in the order of adoption will be found as Appendix I.

CONTENT AND PUBLICATION POLICY

Reference to Recommendations 20, 30, 32, 33, 34, 38, and 39 will make evident the particular stress laid by the Committee upon the necessity for speed of publication of census material. This need appears to the Committee the more urgent in view of the long delay in publishing the results of the Thirteenth Census. To aid in securing this object the Committee, after mature deliberation, emphatically recommended that the Director adopt the policy (outlined in Recommendations 30 and 32) of omitting from the main reports practically all text and publishing the tables as promptly as practicable. It was urged by the Committee that whatever value the text prepared to accompany tables may possess—and such text is, if rapidly prepared, usually a mere repetition of figures and therefore colorless—it was outweighed by the delay occasioned in preparation and in the proof reading and printing. Thus the Committee recommended the radical change of policy shown above, according to which the tables should be published as promptly as possible by themselves and should be followed by a series of special reports upon subjects derived from census returns that were most likely to be of practical importance to the American people, prepared under the supervision of the most competent experts obtainable. Further pursuing this subject, the Committee recommended a tentative list of subjects (as given in Recommendation No. 39) and in response

to the request of the Director indicated a number of workers in statistics who would be competent to handle such reports.

In the opinion of the Committee the creation of this advisory body has been amply justified should nothing else result from their labor than the carrying out of this carefully studied and fully worked out plan of publication and separation of census reports. Too much emphasis cannot be laid upon the defects which characterized previous policies of the Bureau in these particulars. Much of the adverse criticism of the census has been due to such defects. A policy of publishing tables promptly, which means publishing results of the census at the earliest possible moment, and following these by a series of effective monographs, also published promptly, analyzing the more important census results in such a way as to make them intelligible and helpful to the largest number of people would not only afford an effective substitute for a mass of unimportant text repetition of figures, misnamed interpretative, but would mark a great step in advance in the scientific treatment of census results. The attention of the two Associations is especially invited by the Joint Committee to Recommendation 39, made at the last meeting of the Committee, and to the list of topics suggested to the Director of the Census as peculiarly timely or important. The recommendation and list are as follows:

39. The Committee desires to express gratification at the Director's approval of Recommendation 30, sections 3 to 6, advising that the Bureau should at once establish a policy of issuing special studies or monographs upon selected census topics of vital importance to the nation. It is increasingly of the conviction that these special studies are urgently needed to interpret the changes recorded in statistics of this disturbed period. The Committee further recommends that, as suggested by the Director, experts properly qualified to take up this important work under the supervision of Dr. Hill be secured at once. If called upon to do so, the Committee would be glad to coöperate by naming persons qualified to render such expert assistance.

As a tentative and partial list of subjects appropriate for such special studies, the Committee suggests the following titles:

- a. Shifting of population since 1910 between sections of the country and between city and country.
- b. The growth of cities.
- c. The American family.

- d. Foreign born population.
- e. Native population.
- f. School attendance and illiteracy.
- g. Child labor.
- h. Farm tenure, farm mortgages, and land values.
- i. Total and average farm production and farm income.
- j. Changes in farm crops and in live stock since 1910.
- k. Effect of the war on manufactures and mining.
- l. Total production in manufactures per wage earner.
- m. Size of manufacturing establishments and form of ownership.
- n. Integration and specialization of industry.

It was the opinion of the Committee that in publishing the results of the Thirteenth Census more emphasis had been laid upon the state than upon the subject, whereas it was felt that from the standpoint of the public and of scholars the state was a classification unit of decreasing importance and interest. This stress upon the state seemed to the Committee to be a reversion to the census practice prior to 1860, when the state was the primary unit in the presentation of census results. While it was thought that, in order to meet the local demand for statistics for individual states, it might be wise to continue the state supplement, it appeared unnecessary to incorporate all the state bulletins in the final reports. On the other hand, the Committee believed that the omission of the minor civil division table from the main reports at the last census had been a mistake, and recommended that this table should be incorporated in Volume I of the final reports of the Fourteenth Census.

For these reasons the Committee recommended collecting all the bulletins containing statistics of population, agriculture, manufactures, and mining for each state in separate state bulletins and dispensing with the final volumes by states for population, agriculture, and manufactures. The omission of these reports from the final volumes would save a large sum.

FORMAT OF CENSUS REPORTS

The Advisory Committee gave serious attention to the format of census reports and in considering this subject directed the preparation of a paper upon census publications which should review the general question of extent and cost of pub-

lications at the last three censuses and also discuss briefly the subject of distribution. This paper will be found as an appendix to the report of the Committee. The conclusions derived from the discussions of the subject are embodied in Resolution 31, and offer a complete publishing policy.

Much discussion occurred over the relative merits of the octavo and quarto size as regards suitability for the requirements of the census publications. In the Committee's opinion there was no question as to the superiority and value of the octavo size for reference and library use. The objection which has always interfered to prevent a change has been the inconvenience of readjusting census tables to the smaller size. For this reason the Committee concluded that the quarto size should be retained during the Fourteenth Census, feeling it would be unwise in the midst of the pressure and strain of the census period to undertake an experiment which might prove disastrous. The mere time and thought required for readjustment would be a distinct loss to already well advanced work. It was believed, however, that at the close of the Fourteenth Census period and with the taking up of intercensal special reports, the experiment as to the wisdom and effectiveness of the octavo as compared with the quarto size ought to be commenced. Should it prove a failure in connection with one or more minor inquiry, the embarrassment, delay, and expense would be comparatively small and would be well worth risking for the purpose of deciding upon the merits of the octavo size. On the other hand, if the latter should prove successful in connection with the minor reports, by the time the Fifteenth Census had arrived the Bureau would have reached such familiarity with the smaller size and its difficulties as well as advantages that the change from quarto to octavo, if deemed advisable, could easily be made in connection with the next census reports.

In order to reduce so far as possible the inconvenience of the larger size, the Committee urgently recommended that the paper used in the reports of the Fourteenth Census should be much thinner than has been used in reports of former censuses pointing out the practicability and advantages of paper having a weight per ream of not more than 30 or 35 pounds, which

would reduce the weight of the volumes by at least 25 per cent. Thus the reports of the Fourteenth Census, instead of being a bulky set of volumes, would be reduced by the practical elimination of text and the omission of certain state reports and still further by the use of thinner paper to a series of thin volumes easily handled and requiring comparatively little shelf space. This would be a boon to users and to libraries all over the country which should lead to the preservation of census reports where in the past their bulk has frequently prohibited their permanent retention. The Committee further advised the publication of a limited number of the Fourteenth Census reports on all rag paper for permanent library preservation.

CHANGE OF DATE OF CENSUS

At the date of the first meeting of the Committee, held February 10, 1919, the new law covering the taking of the Fourteenth Census was being crowded through Congress during the last days of the session. This bill passed the Senate on the last day of February, passed the House on the third day of March, and was signed by the President on the same day. Had it been possible to propose amendments, the Committee might have advised fundamental changes in Census inquiries and hence in schedules. By the time the Committee was organized, however, the bill had advanced too far to permit any consideration of its provisions. The new law directed a radical change in the date established for taking the Census. All of the censuses prior to 1910 had been consistently taken as of June first, but in order to meet changing conditions in cities due to the departure of large numbers of persons to the country by June 1, the date of the census of 1910 was changed to April 1. As this provision proved unsatisfactory for securing agricultural returns, January first was established in the new law as the date for taking the Fourteenth Census. When the subject was discussed at the hearings before the committees on the census of both Houses, arguments in favor of the change, especially the advantages resulting from a much more satisfactory date for agricultural statistics, were regarded by the Bureau as outweighing the disadvantages. This was perhaps one of the provisions upon which, had the Committee

been in existence earlier, it might have advised a different decision, since the brief references to this subject which were made at the first meeting of the Committee developed considerable skepticism as to the wisdom of the change of date. Aside from the practical aspects of the problem there will be a persisting error in consequence of this change due to the fact that the average user of statistics will make direct comparisons between the Fourteenth Census and the Thirteenth, Twelfth, or any other census without allowance for differences in the dates or in the length of the intercensal periods. A greater objection, however, has developed already in that the change in date from April to January is tending to embarrass the Bureau, by adding to the cost of enumeration and by causing delay owing to the difficulties of travel in the midst of winter. It thus increases the burden upon officials already overburdened with the great task of taking the census.

THE ASSISTANT DIRECTOR OF THE CENSUS

At the request of the Director of the Census the Committee made an effort to advise in the selection of an Assistant Director of the Census to be appointed when the Census Act took effect July 1. Many names were suggested, but it was found that every one of those who were proposed by the Committee was fully occupied elsewhere and unable to give consideration to the claims of the Bureau. Subsequently the Department and the Director decided to invite Mr. Wm. M. Steuart to become Assistant Director of the Census. Being familiar with his excellent previous record as an official of the Census for many years and having confidence in his ability to fill the position satisfactorily, the Committee gave cordial approval to the nomination. Mr. Steuart began his work early in the summer and, with his knowledge of and experience in census work, has proved an invaluable acquisition to the Bureau in preparing for the Fourteenth Census. The position of Assistant Director of the Census has always been a very difficult one. It is a temporary position which involves supervision of permanent officials and employees.

CENSUS DEFECTS

In presenting this report of progress it is appropriate to refer to certain phases of census problems which have impressed the Committee.

Some lack of foresight and organization was shown by the Department of Commerce in arranging for temporary accommodations in connection with the Fourteenth Census. According to the final adjustment, the administrative offices remain in the permanent quarters of the Bureau in the Department of Commerce Building at 19th Street and Pennsylvania Avenue, but the entire producing force, soon to number several thousand clerks, is located in part of a temporary war building at 6th and B Streets, a mile and a half away. It is difficult to exaggerate the inconvenience and waste entailed by such an arrangement. All divisions of the Bureau should be under one roof. It ought to be managed as an independent unit during the decennial census emergency. If this could not have been done, one of the war buildings nearer the Department should have been secured.

Possibly, in passing, the Committee may be allowed also to criticise weakness shown by the Bureau itself in delaying to begin in proper season preparations for the enumeration. Little was done until the Assistant Director was appointed and took office. This resulted in pressure and some delay. It should be noted, however, that the period intervening between the date when the decennial census appropriation became available and the date of the census is three months shorter than at the last census and six months shorter than at the Twelfth Census.

Organization for the immense task of handling the field work and correspondence of the Population Census was also poor. At least one of the Bureau divisions when next confronted by a decennial census enumeration should be completely reorganized by distribution of duties on the principle of modern business organizations of large magnitude. These, however, are details of administration for which the officials of the Department or Bureau naturally are responsible and were not and ought not be within the sphere of an advisory committee.

PECULIAR PROBLEMS OF THE FOURTEENTH CENSUS PERIOD

No Director of the Census in the past in undertaking a decennial enumeration has been confronted with such problems of scarcity of labor and cost of work as have fallen to the lot of the present Director. Instead of receiving an excess of applications for employment on census work, he has encountered great difficulty in securing suitable supervisors and still greater difficulty in securing satisfactory enumerators in sufficient number. For the first time it has been found necessary to utilize the services of women in the latter activity. There are many localities in which the roll of the enumerators is still incomplete. To progress as far towards completing the quota as has been done, the Bureau has been compelled to use the maximum compensation allowed by law for the payment of enumerators. It should be remembered, however, that the addition of only one cent to the per capita compensation allowed enumerators for taking the census represents an aggregate extra cost of more than one million dollars. At the outset the Committee gave some attention to the matter of supervisors, and received the assurance of the Director that it was the policy of the Bureau to secure the best possible men without consideration of political affiliations. The Committee did not expect to insist on securing perfection, but has been entirely content if, with its advice and encouragement, the Bureau has made progress in improving the personnel of supervisors. The subdivision of Massachusetts into eight supervisors' districts in substitution for one in the past was criticised by the Committee and defended by the Director as being in the interest of better administration. Since he was charged with responsibility for the conduct of the census the Committee made no further criticism, feeling that he was the best judge of an operation for which he was himself responsible.

INCREASING DEMAND FOR CENSUS INFORMATION

The occurrence of the war greatly stimulated the demand for information of a statistical character relating to all manner of subjects. Much of this increased demand was a healthy growth indicating the increasing value of statistics in con-

nection with all manner of activities. Hence, certain new inquiries ought to be encouraged. There should be, for example, a complete and accurate commercial census. A wealth of information and a vast store of statistics relating to department stores, drug stores, groceries, and all other leading trade activities could be secured, for which already there is an insistent demand. The Committee has received appeals from a number of sources to advocate the preparation of such data. There is also a demand for greater detail or more frequent enumeration in connection with inquiries which are already authorized, such as those concerning specified important industries and certain agricultural products and operations.

On the other hand, the Director of the Census, while confronted with such demands, finds his own problems of administration greatly increased even though he confine his activities to exactly those which have been customary and long authorized by Congress; he must enumerate a steadily increasing population. He is, indeed, about to include in the census of 1920 at least twenty-five million more people with all their varied characteristics than did the Director of the Twelfth Census in 1900. This means an increase in twenty years of practically one-third in the magnitude of the task. He must secure an army of nearly one hundred thousand persons to aid him, when labor cannot be obtained easily for any known operation, public or private, except at greatly increased compensation; yet the pay which the Census Bureau offers is moderate in the extreme.

In the opinion of the Committee the time is not far distant when the detail which it has been customary to offer in connection with the census of the United States must be sharply curtailed because of the mere magnitude of the task due to the growth of population and industry. It would be wise to recognize this fact and begin at an early date after the completion of the Fourteenth Census a careful and systematic study of the directions in which this curtailment can be applied. First, attention must be given to a number of tables, so as to secure a reduction which will cause the least loss and embarrassment to the users of statistics. It is evident that the great increase in cost which will unquestionably characterize the Fourteenth

Census in common with every other operation, public or private, at this period, if it persists, will tend to hasten curtailment at some point.

PRACTICAL USEFULNESS OF THE ADVISORY COMMITTEE

Ten months have now elapsed since the organization of the Advisory Committee and hence the beginning of its active cooperation with the Director of the Census. During this period the members have gladly contributed their time and best thought to the meetings. The actual cost to the Government has been very small, covering only such traveling expenses as have been incurred, and a small part of the living expenses of members during meetings. The total outlay for a full year of Committee activity will be considerably less than \$1000. What return has the Bureau received for this investment and the time devoted by its officials to the demands of the Advisory Committee? Are there any concrete results to show for its labors? In short, has this Joint Advisory Committee advanced the cause of closer cooperation by proving to be of real service?

The Director of the Census sums up his impression by saying that the work of the Committee thus far has been of much service to him. He expresses the opinion that the members have formed an expert cabinet to which he was able to refer problems and from which he was certain to secure impartial advice.

The Assistant Director says that the impression he has received from his own brief observation and the comment of others has been that the Committee has keyed up the officials of the Bureau and steadied and encouraged them by forming an expert court of the last resort. Finally, the members of the Committee themselves, who have given their time, frequently at much inconvenience, feel that it has been and is an experiment worth while. To have advised and persuaded the Bureau to change the content policy with regard to census reports alone will mark a great advance and, by the omission of text, should effect the saving of a large sum.

Obviously the value of such an advisory body depends largely upon three essentials—knowledge of the subject, faithful

consideration, and attendance. In those three essentials the Joint Advisory Committee of the two Associations has not been lacking. The Committee has pointed out to the Director with much earnestness that he might make his administration noteworthy and of especial service to the Federal Government and to the country by adopting such reasonable and far-reaching reforms in content and mechanical form as have been outlined. His response has been very cordial.

The Committee has pleasure in reporting that during its brief existence it has conducted correspondence with representatives of various independent organizations which have written to the Committee for information or assistance. Among these was the Chief of the Statistical Office of the Dominion of Canada, who submitted a copy of the Canadian Statistics Act and of the Regulations thereunder and expressed a desire to keep in touch with the Committee and receive any reports that it might issue.

The future work of the Advisory Committee doubtless will be comprised in occasional meetings, probably less frequently held, during the coming year, to pass more in detail on form and content, and to advise on special reports, or other subjects, as the opportunity for service develops

FOR THE AMERICAN STATISTICAL ASSOCIATION:

WILLIAM S. ROSSITER, *Chairman*,
CARROLL W. DOTEN,
EDWIN F. GAY.

FOR THE AMERICAN ECONOMIC ASSOCIATION:

WALTER F. WILLCOX,
WESLEY C. MITCHELL,
EDWIN R. A. SELIGMAN.

APPENDIX I

RECOMMENDATIONS MADE TO THE DIRECTOR OF THE CENSUS BY THE JOINT COMMITTEE OF THE AMERICAN ECONOMIC AND THE AMERICAN STATISTICAL ASSOCIATIONS TO ADVISE THE DIRECTOR OF THE CENSUS

1. It is the sense of the Committee that the construction of schedules is a technical task which in the first instance should devolve upon the chief statistician responsible for that inquiry. After each of the important schedules has been drafted, the chief statistician should be authorized and expected to secure the assistance of recognized experts to criticise the draft and suggest changes.

2. The Committee does not consider its function to be that of a detailed study and analysis of schedules, but it is prepared to examine the schedules submitted and to express an opinion upon the larger questions involved.

3. We recommend that each of the special schedules of manufactures should be reviewed and criticised by one expert or more familiar with that industry, to whom a draft of the schedule should be submitted and who then should be invited to come to the Census Bureau for a conference.

4. We believe that the Division of Agriculture is inadequately provided with clerks qualified to help in planning and preparing for the Fourteenth Census and that steps should immediately be taken to supply this deficiency. At the earliest practicable moment the chief statistician for agriculture should be allowed to secure a group of expert special agents to assist in advance organization and training.

5. The Committee is impressed by the fact, dwelt upon by all the officials who conferred with it, that the reduction of three months in the period before the beginning of the enumeration increases the need for the speedy development of plans and for the corresponding reorganization of the office force. Hence, in their opinion, the greatest immediate need of the Census Bureau is for additional experts in the divisions responsible for the coming enumeration to enable the chief statisticians promptly to perfect their organization.

6. The Committee requests the Director to instruct Dr. Hill to prepare for its use a memorandum embodying the following facts:
 - A. The successive stages in the organization of the last one or two censuses showing the building up of the personnel and the method of selecting appointees.
 - B. Costs distributed by districts and branches of work.

7. The Committee approves the tentative population schedule as submitted with the exception that it makes the following recommendations:
 - A. That columns 10 and 11, headed "Whether blind (both eyes)" and "Whether deaf and dumb," be omitted from the schedule, inasmuch as the information can and will be secured by enumerators on a special slip.
 - B. That either column 20, headed "Whether able to read," or column 21, headed "Whether able to write," be omitted. The Committee would leave the choice to the Census authorities, but it expresses the opinion that the question as to ability to read is the more important.
 - C. That an extra subcolumn be added under column 22 asking the "locality of birth."

8. The general schedule for manufactures as used at the census of 1914 is approved. The Committee reaffirms its recommendation that each of the supplemental schedules of manufactures should be submitted to the criticism of expert representatives of the several industries, but would like to have the privilege of final consideration of the schedules after their revision.

9. It is the opinion of the Committee that the number of separate inquiries in the schedule of the Census of Agriculture should not exceed 400. It recommends the immediate temporary appointment of a special expert to undertake such revision at once in coöperation with Mr. Austin, and that the report of this conference be prepared for the consideration of the Committee at its next meeting.

10. The Committee requests the Director to assign some competent person to the task of preparing for its information a time schedule for all the divisions covering the preparation, enumeration, tabulation, and publication of reports for the Fourteenth Census and stating the clerical and material requirement at each step necessary to complete the census within the time prescribed by law, the same to form an orderly and coördinated statement of census operation and need. The attention of the Director is invited by the Committee to the fact that certain important memoranda have already been submitted to the Committee through the Director, which could form the beginning of this work.

11. It was voted that hereafter the first business taken up by the Committee in assembling for a series of meetings shall be the reports of subcommittees and also to hear from the Director what disposition, if any, had been made of recommendations submitted to him as a result of the deliberations of the Committee at the preceding meeting.

12. The Committee has carefully considered the paragraph in the Director's letter of March 20 dealing with its suggestion that one of the two questions on illiteracy be omitted. We agree that it is important to preserve comparability with similar returns at earlier censuses but doubt that this consideration should be given decisive weight because—
- A. Illiteracy returns are subject to more error than we had thought, as is shown by the experience of the army in dealing with this problem.
 - B. An estimate of the number unable to write from the number reported unable to read would probably be almost if not quite as near the truth as an enumeration.
 - C. While in 1900 the answers to both questions were tabulated, in 1910 only those unable to write were tabulated. The original suggestion of the Committee thus involved nothing more than omitting from the schedule a question of which no use seems to have been made in the tabulation of 1910.

In view of this situation the Committee continues in favor of omitting one of these questions and believes that it would be better to retain only the question "Whether able to read."

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13. The Committee approves the changes made in the agricultural schedule but refers the matter to Professor Doten to confer with the Chief Statistician for Agriculture with regard to further reductions or duplications. It approves as final any conclusions reached by them.

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14. The Committee invites the submission of an outline of the plan of organization for the Fourteenth Census referred to in the last paragraph of the Director's letter of March 20 and would be glad to receive this in advance of the next meeting in order that each member may examine it before it is brought up for consideration at the meeting.

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15. The Committee has considered the memoranda of Dr. Hill and Mr. Hunt on the problem of separating urban and rural population, notably in three New England states, one of which is New Hampshire, and has submitted these to a prominent member of the New Hampshire legislature for an opinion. Based upon the memoranda and response the Committee makes the following recommendation:

That the Census Bureau undertake to differentiate within New England towns the unincorporated villages from the outside rural population under rules stated below:

- A. In towns where village districts have been defined under the statutes for purposes of lighting, taxation, etc., the boundaries of these districts should be regarded as the limits of the village.
- B. In other towns the selectmen should be requested by the Bureau of the Census to define the boundaries of villages within the limits of the towns so that enumerators can recognize them.
- C. In towns in which no village districts have been defined and in which

the selectmen fail to respond to the request of the Bureau, enumerators should be instructed to regard the village as extending to that point along any road leading out of the village at which the distance between any house and the next house beyond exceeds 300 feet.

16. The Committee has inspected the mechanical equipment of the Census Bureau and has discussed the results of its observations. It was struck by the unequal development of the devices for the three stages of mechanical tabulation of population returns—card punching, sorting, and counting. Of these devices that for punching is still unsatisfactory, while the other two have been brought to a high state of perfection. The Committee urgently recommends that the antiquated pantograph punch be utilized only as a reserve and as a last resort and that steps be taken at once to summon to conference technical experts to undertake the task of making the existing automatic punch or a development therefrom a practical and effective power punch for use at the coming census. It is the confident hope of the Committee that energetic effort will overcome existing defects in such machines. It may even be possible to secure the development and manufacture of an entirely new machine if it proves to be desirable. The Committee recommends that no effort be spared to secure the improvements indicated. The Committee is convinced that considerable outlay in perfecting an automatic punch would be fully justified by ultimate economy.
17. The Committee approves the method of ascertaining the limits of unincorporated villages in certain New England states set forth in the memorandum of Messrs. Hill, Hunt, and Sloane and expresses the opinion that they have worked out this problem satisfactorily.
18. In view of the new and very interesting evidence submitted to the Committee with the Director's letter of April 17 and showing the probable advantage of retaining both questions on illiteracy and tabulating the answers, the Committee now withdraws its original recommendation that one of the two questions be omitted and substitutes therefor the following:
 - A. That both questions be retained, the answers to both tabulated, and the results published.
 - B. That efforts be made through special studies in certain small areas and by comparisons with other returns to check the accuracy of these answers and to ascertain the probable error of the census figures.
 - C. That a special report on illiteracy based on this material should be prepared by the Bureau of the Census and published as soon as may be after the main reports appear.

19. The Advisory Committee has considered with interest the explanation of the Director of the Census concerning the status of devices available for punching cards required for the Fourteenth Census and has witnessed the test now in progress at the Bureau of the Census of three machines owned or controlled by the Bureau and of one submitted by a private corporation. It has also inspected the operation of certain proprietary devices adapted to such purposes in use at the Interstate Commerce Commission and at the Bureau of Internal Revenue.

The Committee recommends:

- A. That following the precedents established at earlier censuses the Director of the Census appoint a commission to supervise a systematic test, upon which commission, in order to forestall criticism, one member at least should be an expert not connected with the Department of Commerce.
 - B. That the Powers Accounting Machine Company and any other concerns having mechanical devices adapted to punching census cards should be invited to submit their devices in competition.
 - C. That for the test herein recommended certain rules should be formulated which should take into account experience and differing adaptability of clerks employed.
 - D. In view of the fact that the punching device is far behind the tabulating and sorting machines in point of development and that this device is of vital importance, sufficient time should be allowed for a thorough test.
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20. The Committee believes that the results obtained from the schedules of population, agriculture, manufactures, mines and quarries, and forest products available for publication should be classified as to their sequence of completion in order that a plan for publication can be formulated in advance which will enable the presentation in the printed page of the results of the census as promptly and systematically as possible. To this end the Committee requests that a statement be prepared and submitted to it by the various divisions as to the expected sequence and probable time of completion of the material here specified.
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21. The Committee transmits herewith to the Director of the Census a copy of a letter dated April 5 from Mr. Malcolm C. Rorty, Chairman of the Committee on Business Statistics of the American Statistical Association, with a copy of a letter which accompanied it. The Committee approves in general the proposal set forth in the correspondence noted, but suggests that in working out the classification of industries for which statistics are to be secured pains should be taken to see that it is coördinated as far as possible with that of the Price Section of the War Trade Board, now in process of transfer to the Bureau of Internal Revenue, and with the classification in use by the Federal Reserve Board.

22. The attention of the Committee has been called to the fact that the division for collecting price statistics of the War Trade Board, which has performed a function generally recognized as exceedingly important, is about to be taken over temporarily by the Bureau of Internal Revenue and that officials of that Bureau would be entirely willing to see it transferred to the Bureau of the Census permanently. The Committee believes, and has already publicly so stated, that this division belongs properly to the Census as a part of its permanent organization. If this opinion meets with the approval of the Director of the Census, the Committee recommends that the Director make such representations to that end to the Secretary of Commerce and the Commissioner of Internal Revenue as may be necessary. The Committee further offers its services to the Director in securing any legislation that may be required to effect a transfer.
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23. The Advisory Committee welcomes the Director's statement of May 19 that he would "not be averse to . . . testing the accuracy of the illiteracy statistics, especially if some simple, effective, and inexpensive way of doing it can be suggested." It believes that if in certain small areas, for example, near large universities or associations especially interested in conditions in their vicinity, the names and addresses and illiteracy returns for every person over 10 years of age should be placed in the hands of students of statistics or other volunteers for verification not long after they were gathered, much light upon the probable error of the returns could be obtained from these random samples of the population. If this suggestion should commend itself to the Bureau, the members of the Committee would be glad to coöperate in its execution.
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24. The appointment clerk should be a real employment manager and should have full charge of all matters pertaining to the hiring, training, promotion, and welfare of the personnel of the Bureau. A strong, able, and experienced man or woman should be secured for this work.
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25. The Committee has examined the correspondence with the Powers Accounting Machine Company and has conferred with the Director concerning the test now in progress of punching machinery and concerning his plans for selecting mechanical equipment for punching the population cards of the Fourteenth Census. It is the opinion of the Committee that the method so far employed by the Bureau may fail to insure that the most efficient device will be secured for the purpose specified. It is perhaps unnecessary to repeat that the Advisory Committee is in no way concerned with the success of any particular competitor, but is vitally concerned, and feels to some extent responsible, that the most efficient mechanical equipment possible shall be secured to carry on the work of the Census.

- A. We approve the policy of the Bureau to have ample reserve of pantograph and key punches for use in the event of failure to secure a more effective device.
 - B. We recommend that, having such reserve provided in ample season, the Director invite the Powers Accounting Machine Company, in response to their letter of May 13, and any other concern capable of submitting a suitable punch, to construct and submit at their own expense and risk an improved punch or punches at the earliest practicable date (even as late as September 1, 1919) which shall then receive a prompt and thorough test. In the event of the evident superiority of any one of the devices thus submitted over the punches in reserve, the Committee recommends that the successful machine be adopted, but if because of time limitation a sufficient number of such machines can not be constructed in season to punch all the population cards, that as many machines be ordered as can be secured in season for use to supplement the pantograph or other punches actually available and in use.
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26. *Resolutions concerning the classification of occupations.*— Because of its doubt about the character of the returns that will be made by the enumerators the Committee favors a rather conservative policy in the classification of occupations by the office force. The following recommendations are submitted for consideration.

- A. That the extraordinary difficulty and the pressing importance of securing better occupation returns be called to the attention of the Director of the Census as a special reason justifying his effort to secure a more efficient corps of supervisors, inspectors, and enumerators than the Census has had heretofore.
- B. That in preparing the Instructions for Enumerators full use be made of the experience of the Thirteenth Census in an endeavor to guard against the commonest errors in reporting occupations.
- C. That emphasis be put upon the importance of making accurate returns of occupations in the preliminary training given to enumerators.
- D. The Advisory Committee urgently recommends that the practice of inspecting schedules in the offices of the supervisors before they are sent to Washington be systematized and extended. By way of tentative plan we suggest that there be selected from the staff of each supervisor one or more inspectors of schedules and that these men be given special preliminary training in the performance of their duties. Wherever physical conditions permit, each enumerator should go over at least his first schedule with an inspector who should pay especial attention to the occupation returns. Further all schedules should be examined and approved by inspectors before they are accepted by the supervisors from the enumerators.
- E. That Mr. Edwards' plan of elaborating the standard classification of occupations by increasing the number of entries from the 428 used

in Tables I–III of the report on Occupations issued in 1914 to about 600 be endorsed.

- F. That as far as possible the changes made in this elaboration of the occupations classification should be so made as to keep the occupation statistics of the Fourteenth Census comparable with the corresponding figures of the Thirteenth Census.
- G. That in classifying occupations the controlling criterion shall be the kind of work done: for example, greenhouse laborers, locomotive firemen, commercial travelers, carpenters, stenographers and typewriters.
- H. That no separate classification by industries as in Table VI of the Thirteenth Census volume on occupation statistics be attempted; but that the information concerning the industry be utilized when appropriate to aid in forming a judgment concerning the kind of work done.
- I. That, if possible, all the occupation returns be classified by a specially-trained force before cards are punched.
- J. That in the report on occupation statistics an effort be made to analyze the tables thoroughly, and to present figures for the whole country and for broad geographical sections, if not for states and large cities, in which the persons following the 600 occupations recognized are classified according to

Literacy.	Country of birth or mother tongue.
Marital condition.	Class of worker—whether employer, employee, or working on own account.
5-year age groups, and single years up to 18 or 20.	

There is some doubt about the value of the last-mentioned cross classification. The Advisory Committee would be glad to know what the staff of the Census Bureau thinks upon the subject.

- K. That it is desirable further to have this general analysis supplemented by intensive studies of the occupations of special groups of persons, such as the following:

Blind and deaf.	Women.
Illiterates.	(Children, under 15 years of age.)
Negroes.	(Young persons, 16–20 years of age.)

27. The Committee regrets that it cannot concur in the conclusions of the Bureau in connection with the development of punching devices or with the policy indicated in the Director's several rejoinders in response to Resolution 25 and previous resolutions on the subject. The nature of the rejoinders has convinced the Committee that it cannot render service by further recommendations on the subject.

MEMORANDUM TO ACCOMPANY RECOMMENDATION 27

In connection with recommendation number 27, the Committee desires to restate the facts which inspired the recommendations concerning card punching devices which it has submitted to the Bureau.

In 1890 the device used by the Census Office to punch the population card was a simple pantograph makeshift hastily invented by the inventor of the tabulating machine to supply an accurately punched card. The defects in this punch were small product, double punching, separate gang punching, and physical strain upon the operator.

During the decade which followed the inventor concentrated his effort upon improving the tabulating machine, and the rudimentary pantograph punch was again used at the Twelfth Census (1900).

During the succeeding decade (1900-1910) the patent rights on the tabulating devices expired and the Bureau set about developing a tabulating machine of its own and a motor driven punch. These machines were used to tabulate the Thirteenth Census, but for various reasons, one of which was hasty contract construction, the motor driven punch, known as the Powers punch, proved unreliable and a large part of the population cards of the Thirteenth Census were again punched with the old pantograph hand device.

When the Advisory Committee began its work it was informed by the Director of the Census and the Chief Clerk that the Census had further developed the tabulating and sorting machines to a high degree of efficiency, but that the Bureau was beginning a test of punching devices adapted to punch Fourteenth Census population cards. The competing machines were to be as follows:

- a. A Powers punch repaired for the test by the Bureau of Standards.
- b. An original pantograph punch.
- c. A pantograph punch reinforced by a self-feeding and locking device.
- d. A key punch submitted by the Tabulating Machine Co. (necessitating a different arrangement of characters on the card).

The Committee inspected this test shortly after it began. The members felt that none of the machines included in the competition was adequate and that the test was likely to be misleading and unsatisfactory. This impression was strengthened by the fact that when the Committee asked why the Powers Company, which manufactures punching and tabulating devices based on the Census motor driven punch, had not been invited to compete, ignorance of the Company's whereabouts was professed, but by using the telephone the Committee secured the presence at their meeting of a representative of the Powers Company within half an hour.

Consideration of this problem by the Committee resulted in these conclusions:

- a. While great progress had been made in the development of Census tabulating and sorting machines, none had been made in machines for punching population cards if no substitute were now available for the pantograph hand punch of thirty years ago. The members further believed that the defects in this device were so obvious that good administration required definite improvement before the Fourteenth Census.
- b. The proposed test included only one machine which was offered in good faith (the key punch). The other three devices were two pantographs competing against each other, and a defective Powers motor punch not capable of service without radical change.
- c. The Committee also criticised the organization and conduct of the test, and felt that for the reasons noted, broad conclusions therefrom would be of small value.

Accordingly they recommended immediate conference with the Powers Company, and any other concern capable of offering a punch superior to those submitted, and the energetic application of the

resources of the Bureau to develop a punch which would increase product, reduce error, and facilitate operation.

The responses of the Bureau to the Committee's recommendations have been such as to lead to the comment with which this rejoinder begins.

The Committee concludes its references to this subject by expressing the opinion that the Bureau is and will continue to be open to grave criticism as long as it utilizes for the great task of punching the cards of a decennial population census a slow and painfully operated device, thirty years old and admittedly only a makeshift when it was originally constructed.

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28. The Committee notes with gratification the Director's substantial acceptance of its various recommendations regarding occupation statistics. The only comment it wishes to add concerns the statistics of occupations of young persons by single years.

The Committee recommends:

- a. That the occupations of workers under 16 years of age by single years, which were tabulated but not published at the Thirteenth Census be published in the Fourteenth Census reports.
- b. That corresponding statistics based on the returns for 1920 be extended, if possible, to embrace all workers under 18 years of age. Reasons for this recommendation are the growing importance of and interest in
 - a. Vocational training.
 - b. "Blind alley" occupations.
 - c. State regulation of part-time employment of young persons (many states now have laws of this character applying to all persons up to 18 years of age).
 - d. The desirability of facilitating comparisons of this character at future censuses.

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29. The Advisory Committee has given careful consideration to the Director's statement of June 24 relating to Resolution 24 adopted at its meeting of May 23-24 and it is the opinion of the Committee that, owing to the brevity of this resolution, the Director did not fully understand the Committee's intent. It therefore desires to repeat its recommendation in greater detail as follows:

- a. That a personnel office be organized.
- b. That this office be under the charge of a well trained expert, experienced in the duties of employment management.
- c. That this employment manager be placed under the direction of and made responsible to the Chief Clerk in the conduct of his office.
- d. That the employment manager be given control of the following branches of work:
 - a. Training and promotions.
 - b. Efficiency and service records.
 - c. Vacations and leaves of absence.

- d. Health and sanitation.
- e. Housing, lunch room, and recreation facilities.

There should be a rest room and dispensary in charge of a physician and a nurse. The physician would not need to be in constant attendance, but a competent trained nurse should be on duty at all times when any considerable number of employees of the Bureau are at work.

30. The Bureau of the Census is allowed by law three years in which to take the Fourteenth Census, tabulate the returns, and publish the results. The Advisory Committee is strongly of the opinion that a great opportunity is offered to the Bureau of the Census to complete the operation in less time than the three year period. Next to accuracy, speed in completing and publishing the results is the greatest service which the Bureau can render to the country. To facilitate this important result the Advisory Committee recommends:
- a. That the results obtained from successive runs of the cards or from handling the schedules be published in bulletin form immediately after they have been secured, without delaying for the purposes of rearranging the material, including numerous percentage tabulations, or of inserting text beyond what is needful to make clear the meaning of the words and figures.
 - b. That the bulletins thus issued be combined into final volumes with the greatest possible speed, and to that end with the minimum amount of changes in tabulation matter and little, if any, extension of text.
 - c. That plans be adopted at once for a series of special studies dealing with the various census topics and interpreting the latest census figures in the light of similar figures of earlier dates and other relevant matter.
 - d. That after the subjects of these studies have been determined, the best qualified experts should be secured to undertake them, in coöperation with the regular staff of the Bureau. The resources of the Bureau should be at their disposal so far as other demands make possible. Their preliminary work on such studies should begin at an early date.
 - e. The supplementary studies recommended in paragraphs 3 and 4 should be published as bulletins if feasible, and finally combined into volumes to form the closing issues of the Fourteenth Census reports.
 - f. That a careful study should be undertaken at once to standardize tabulations with a view to comparability, and to avoid duplications and inconsistencies in the tables of the Fourteenth Census. The Committee believes that this study and its resulting recommendations will prove of far-reaching importance to the Bureau, and earnestly recommends that arrangements be made at once with a competent expert to undertake this work.

31. *Recommendations relating to the Decennial Census publishing policy of the Census Bureau.*

After consideration of the following review of census publication operations, the Committee submits the following recommendations in connection with Fourteenth Census publications:

- a. Publications of the Fourteenth Census should consist as at the Twelfth and Thirteenth Censuses, of bulletins giving advance announcement of the results of the enumeration; final reports presenting the results of the census in permanent form; an abstract to summarize and popularize census facts; and monographs or minor volumes on special census subjects.
- b. The mailing list of the Census Bureau for the distribution of bulletins and final reports or volumes of the Fourteenth Census should be established by preliminary inquiry and should include:
 - a. Libraries containing more than a specified number of volumes.
 - b. Workers in statistics in colleges, universities, and schools, and in private life whose interest is enlisted to that end, such persons including the membership of the American Statistical Association, American Economic Association, American Sociological Society, American Public Health Association, National Association of Manufacturers, and other similar organizations.
 - c. Certain Federal, state, and municipal officials.
 - d. Names of persons submitted by senators and representatives (not to exceed approximately ten names of citizens or organizations to each such official) conforming to certain standards of interest in statistical research expressed in response to inquiry by the Director of the Census as to their desire to receive Census publications.
 - e. A limited list of clubs and institutions, such as Chambers of Commerce and Boards of Trade, responding to appropriate inquiry.
 - f. A special list in each state to which only bulletins relating to the state are to be sent.

The circular letter of inquiry should list and describe the bulletins and final volumes explaining especially the value and cost of the latter, inviting legitimate requests for any or all of the publications. The mailing list for both classes of publications should be such as to secure wide and effective distribution.

- c. The mailing list for the abstract should be that established in paragraph (2), with such additions as may prove advisable because of the popular character of the publication.
- d. Bulletins should be printed on machine finish paper of standard weight. Volumes should be printed on thin paper of good quality not exceeding 30 or 32 lbs. per ream of 25 x 38 size. By following this policy the weight of a volume approximating 1,200 pages would not exceed five pounds.
- e. A certain number of copies, possibly 1,000, should be printed on paper which will show little effect from the passage of time, such as all rag

- or Japanese parchment. These copies should go to Government depositories and to Government offices and important libraries.
- f.* The binding of the final reports and of the abstract of the Fourteenth Census should be in dark brown cloth stamped in aluminum.
 - g.* To the end that all possible saving of time may be effected, it is recommended that practically all so-called interpretative text be omitted from the bulletins and reports of the Fourteenth Census and that no text be printed in the bulletins and final reports that is not needed to clarify tables or to prevent misconstruction of figures, and that all interpretation be reserved for special studies.
 - h.* The Fourteenth Census abstract should be of octavo size printed on thin paper and should contain not only decennial census data but other figures derived from intercensal investigations sufficient to make the volume a complete record of recent census results. The Committee recommends that the Director of the Census secure the services of an expert in such compilation at an early date, to follow census publications closely so that the abstract may appear at the earliest practicable date after completion of census returns.
 - i.* Rigid economy should not be the first consideration in connection with the preparation and distribution of Fourteenth Census publications. Instead the first consideration should be a reasonably wide distribution of results. To avoid all extravagance, to secure estimates, and to conduct census publishing with prudence and intelligence is, as a matter of course, assumed to be essential to good administration. But the desire to hold down publication expenditures to some arbitrary figure should not be permitted to stand in the way of the larger objective of distributing the decennial account of stock of the nation in reasonably generous fashion to the American people.
32. The Committee reaffirms its recommendation to omit from bulletins and reports to be published within the decennial census period all text not required to explain or qualify tables. This restatement is based upon the increasing conviction that speed in securing and publishing the results of the Fourteenth Census so far as it is consistent with accuracy is the most important objective to be secured. To that end the results of the population census should be published in bulletin form in the order in which the successive runs are completed without delaying for the rearrangement of tabular matter or the preparation of text.
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33. The Committee recommends the publication of state bulletins giving the population by minor civil divisions as rapidly as the completion of the data permits. The entire minor civil division table should be subsequently incorporated in Volume I, in accordance with the uniform practice prior to 1910. The series of minor civil division bulletins should be followed by other series of topical population bulletins

presented by states or groups of states substantially in the order of the tabulation.

34. The Committee recommends that the statistics of agriculture be tabulated by topics and that the first tables prepared and published be those relating to farm acreage and values and the second those relating to farm crops and live stock on farms.
35. The Committee approves the Division of Agriculture's policy of including returns of farms located within city limits in the agricultural tables for the county in which the specified city is located.
36. The Committee recommends that if the Census Bureau regards it as advisable to use for any geographical unit crop values obtained in the form of averages from the Department of Agriculture the results be shown by counties. The Committee is inclined to believe that if the Department of Agriculture plans to publish crop values in any detail, the publication of these same figures by the Census would tend to duplication and might be unwise.
37. The Committee further recommends that all bulletins containing statistics of population, agriculture, manufactures, and mining for each state should ultimately be brought together in separate state bulletins and that a limited number of these bulletins should be bound as volumes for distribution to depository libraries.
38. The Committee recommends that Volumes II and III, Population, Volumes VI and VII, Agriculture, and Volume IX, Manufactures (so far as the material appears elsewhere), as constituted in the Thirteenth Census reports, be omitted from the Fourteenth Census, inasmuch as all the material which would otherwise appear in three volumes of the Fourteenth Census would appear—if Recommendation 37 is adopted—in bound volumes of bulletins. Original data, if any, now appearing in the state sections should be presented in the general reports.
39. The Committee desires to express gratification at the Director's approval of Recommendation 30, section 3 to 6, advising that the Bureau should at once establish a policy of issuing special studies or monographs upon selected census topics of vital importance to the nation. It is increasingly of the conviction that these special studies are urgently needed to interpret the changes recorded in statistics of this disturbed period. The Committee further recommends that, as suggested by the Director, experts properly qualified to take up this important work under the supervision of Dr. Hill be secured at once. If called upon to do so, the Committee would be glad to cooperate by naming persons qualified to render such expert assistance.

As a tentative and partial list of subjects appropriate for such special studies, the Committee suggests the following titles:

- a.* Shifting of population since 1910 between sections of the country and between city and country.
- b.* The growth of cities.
- c.* The American family.
- d.* Foreign born population.
- e.* Native population.
- f.* School attendance and illiteracy.
- g.* Child labor.
- h.* Farm tenure, farm mortgages, and land values.
- i.* Total and average farm production and farm income.
- j.* Changes in farm crops and in live stock since 1910.
- k.* Effect of the war on manufactures and mining.
- l.* Total production in manufactures per wage earner.
- m.* Size of manufacturing establishments and form of ownership.
- n.* Integration and specialization of industry.

APPENDIX II

PERSONNEL OF THE JOINT ADVISORY COMMITTEE

CARROLL W. DOTEN, Professor of Economics, Massachusetts Institute of Technology, Cambridge, Massachusetts. For many years Secretary of the American Statistical Association; actively connected with the Census Bureau during the Thirteenth Census period (1909). At the time of his appointment was a member of the staff of the Central Bureau of Planning and Statistics in Washington.

EDWIN F. GAY, President of the New York Evening Post, Incorporated. Former Dean of the Harvard Graduate School of Business Administration; specialized in Economic history. At the time of his appointment Director of the Division of Planning and Statistics of the Shipping Board, Chairman of the Division of Planning and Statistics of the War Industries Board, Director of the Central Bureau of Planning and Statistics, member of the War Trade Board and other important war-time organizations.

WESLEY C. MITCHELL, Professor New School of Social Research; President of the American Statistical Association, 1917-18; connected with the Census Office 1899-1900. At the time of his appointment engaged in important economic work for the Government related to war activities. 15 Washington Square, New York City.

WILLIAM S. ROSSITER, Chairman, President of The Rumford Press, Concord, New Hampshire. Expert special agent or Chief Clerk of the Census 1900-1909 (during the Twelfth Census and subsequent period). Author of "A Century of Population Growth in the United States, 1790-1900" and papers upon statistical subjects. At the time of appointment was a member of the staff of the Central Bureau of Planning and Statistics in Washington.

EDWIN R. A. SELIGMAN, McVickar Professor of Economics and Finance at Columbia University. Former President American Economic Association. Member of the Commission on Federal Statistical Reorganization, 1908; author of many works on economic and statistical subjects. 324 West 86th Street, New York City.

WALTER F. WILLCOX, Ithaca, New York. Professor of Economics and Statistics, Cornell University. Former President of the American Statistical Association and the American Economic Association; long connected with the Census Office as an official of the Twelfth Census and expert writer; prepared a number of census reports. Consulting Statistician, New York State Department of Health; actively engaged in statistical and census work.